Commonwealth Institute of Helminthology
The White House,
103 St. Peter's Street,
ST. ALBANS, Herts., AL1 3EW, England.

Library

BIBLIOGRAPHY ON HELMINTHOLOGY IN IRAQ COMPILED FROM HELMINTHOLOGICAL ABSTRACTS 1930-1969

ANNOTATED BIBLIOGRAPHY NO. 3

COMMONWEALTH INSTITUTE OF HELMINTHOLOGY

Digitized by the Internet Archive
in 2025

https://archive.org/details/annotated-bibliographies-helminthology_1930-1969_3

BIBLIOGRAPHY ON HELMINTHOLOGY IN IRAQ COMPILED FROM HELMINTHOLOGICAL ABSTRACTS 1930-1969

Journal of the Royal Egyptian Medical Association.

ABDOU, S. & GRACE, H. K., 1948.—" Observations on the late results of splenectomy for bilharzial splenomegaly." 31 (10), 786–791.

Spenomegaly is very prevalent in Kafr-Abu-Naser on the north-eastern border of the Dakahlia Province of Egypt. Of 344 individuals between 8 and 20 years old, 78% were bilharzia cases : of these 134 had *Schistosoma mansoni*, 59 had *S. haematobium* and 76 had a mixed infection. 100 cases, i.e. 29%, had splenomegaly : 11 of these were non-bilharzial and 89 were bilharzial in origin. Of these 89 bilharzial cases, 84 were associated with *S. mansoni* infection and 5 with mixed bilharzial infections. It is important to treat with tartar emetic early cases of bilharzial splenic enlargement, cases of reinfected splenectomy, and every case of bilharzial splenomegaly before operation. The results of splenectomy in 42 cases are recorded.

R.T.L.

FAO Plant Protection Bulletin. Rome.

ALLISON, J. L., 1952.—" Diseases of economic plants in Iraq." 1 (1), 9–11.

From preliminary surveys of plant diseases in Iraq and from earlier records, the common diseases known to attack plants of economic value in Iraq are summarized. Among these, mention is made of *Tylenchus tritici* [*Anguina tritici*] in wheat, *Meloidogyne* spp. in lettuce, tomato, eggplant, okra, watermelon, muskmelon, cucumber and squash, fig, almond and sesame. Most of these crops are grown under irrigation and the infections are of minor importance at present.

R.T.L.

Bulletin of Endemic Diseases. Baghdad.

BAILEY, V. M., 1955.—" Notes of the incidence of human parasites in Samawa, Iraq." 1 (3), 250–252.

Bailey records that the incidence of ascariasis in the Samawa area in Iraq appears to be higher, and that of ancylostomiasis lower, than previously reported. Of 497 faecal specimens examined 26·8% were positive for Ascaris and 9·5% for Ancylostoma, compared with 2% and 41% respectively which were the figures given by the Government for 1951. The possible reasons for these differences are discussed. Of 1,511 urine samples examined 6·4% were positive for *Schistosoma haematobium*.

S.W.

BAILEY, V. M., 1958.—" An intestinal parasite survey in a rural district of Baghdad." 2 (3/4), 148–151.

Bailey reports the results of an intestinal parasite survey by faecal examination in the rural district of Tarmiya, 40 miles north of Baghdad. The results are summarized in a series of tables. The over-all infection rates found were *Ancylostoma duodenale* 54·8%, *Ascaris lumbricoides* 19·61%, *Enterobius vermicularis* 0·35%, *Strongyloides stercoralis* 0·35%, *Trichostrongylus* 0·35%, *Schistosoma haematobium* 1·77%, *Hymenolepis nana* 1·78%, *Taenia* 1·07%. No marked difference in the infection rates was observed between males and females or between adults and children.

J.M.W.

Archiv für Hygiene und Bakteriologie.

DENECKE, K., 1954.—" Die Helminthosen im Irak." 138 (2), 149–156. [English & French summaries p. 156.]

Worm diseases are widespread in Iraq, lowering the work output and the standard of living of the population and are largely due to poor hygiene. In the autumn of 1953, out of 800 faecal examinations made at the hospital in Hillah, near the river Euphrates, 13·2% were positive for *Ascaris lumbricoides*, 1·4% for *Trichuris trichiura*, 7·4% for *Strongyloides stercoralis*, 30% for *Ancylostoma duodenale* and 0·75% for *Hymenolepis nana*. Only one person harboured *Taenia saginata*. *Dracunculus medinensis* infections are rare in the steppes but numerous in the desert. *Schistosoma haematobium* was present in 14·6% of 750 urine samples taken at the hospital but only in 4·9% of Hillah schoolchildren. Schistosome infections are spread by the irrigation system in the south of Iraq. Attempts to eradicate the snail population by treating the canal systems with copper sulphate proved unsuccessful. Eggs of *S. haematobium* were not also found in dogs, camels and water buffaloes. The total number of cases treated in State centres rose from 15,852 to 27,388 during the years 1944 and 1949 and it was estimated that of the 5 million population of Iraq 200,000–250,000 were chronic bilharzia cases. In the same years the number of cases treated for *A. duodenale* ranged between 6,332 and 13,912. Hookworm and bilharzia caused chronic, secondary anaemia, aggravated by a low protein and vitamin B diet. Increased numbers of eosinophils, as expected in heavy worm infections, were not found.

G.I.P.

Edinburgh Medical Journal.

DOUGLAS, D. M., 1948.—" Hydatid disease." **55** (2), 78–91.

Hydatid disease is endemic in the central plain of Iraq, between the Tigris and Euphrates, where sheep are raised in large numbers. One hundred and forty cases were surgically treated in the Royal Hospital, Baghdad between 1942 and 1946. In 107 of these cases the cysts occurred in the liver or lung. General diagnostic methods are outlined. It is observed that a subcutaneous tumour which in Britain would be dismissed as a lipoma may in Iraq prove to be a hydatid cyst. Aspiration is condemned owing to the risk of leakage. The hydatid thrill is not usually present when there are daughter cysts and is of doubtful diagnostic value. In all surgical treatment the germinal layer should be eliminated without spillage. Recurrence after surgery is by no means rare. R.T.L.

Bulletin of Endemic Diseases. Baghdad.

EL AZZAWI, J. A. H. & KLIMT, C. R., 1958.—" Bilharzia skin test trials in Iraq." **2** (3/4), 100–116.

(96a) El Azzawi & Klimt carried out skin tests on 315 cases of *Schistosoma haematobium* and 500 bilharzia-free individuals, using Salisbury (*S. mansoni* cercarial) antigen. Only 70·8% of the infected group showed a true positive reaction, while no less than 56·0% of the control group showed a false positive reaction. A second (London) antigen prepared from livers of *Australorbis glabratus* infected with *S. mansoni* was used to carry out skin tests on 500 bilharzia-free persons. 13·4% gave negative reactions, 12·8% positive reactions, and 73·8% gave unclassifiable reactions. A significant correlation was established between positive skin reaction and presence of helminth ova in the faeces. J.M.W.

HAMAMI, A., 1955.—" Report of the Bilharzia Section." [Annual Report of the Institute of Endemic Diseases, Baghdad, for the year 1953.] **1** (2), Supplement pp. 20–24. [Also in Arabic.]

A detailed report in Arabic of the work of the Bilharzia Section of the Institute of Endemic Diseases, Baghdad, during the summer of 1953, is summarized in English. The incidence of schistosome infections found in surveys, mainly of schoolchildren, in 11 liwas of Iraq is tabulated. The highest was 45% in Kut and Basrah. In Muntafik it was 40%, in Diwaniyeh 26%, in Dyala 24%, in Baghdad 21%, in Amarah 9%, in Hilla 5%, in Kerbelah 4%, in Dulaim and Mosul 2%. Treatment of canals with copper sulphate reduced the incidence of *Bulinus* but eradication was rarely achieved. R.T.L.

JOURNAL OF THE FACULTY OF MEDICINE OF BAGHDAD, IRAQ.

JALILI, M. A., 1950.—" Incidence of bilharziasis in Iraq." [Correspondence.] **14** (5/6), 186.

Journal of the Faculty of Medicine of Baghdad, Iraq.

JAWAD, H., 1952.—" Four cases of trichostrongyliasis in Iraq." **16** (2), 68.

Four cases of trichostrongyliasis have been recognized by the Department of Bacteriology, Baghdad, during the past ten years. They were all Iraqis with symptoms of anaemia and epigastric pain and had been suspected of suffering from hookworm infection. R.T.L.

KELLY, T. D. & IZZI, N., 1959. "Pulmonary hydatid disease in Iraq, with a review of history and life history of the parasite." **Journal of the Faculty of Medicine, Baghdad. New series, 1** (3), 115–140.

Transactions of the Royal Society of Tropical Medicine and Hygiene.

MacHATTIE, C., 1936.—" A preliminary note on the life history of *Schistosoma turkestanicum* Skrjabin, 1913." **30** (1), 115-124.

Ornithobilharzia turkestanicum occurs in almost every sheep and goat in the Amarah Marsh-Arab and rice field areas in Iraq. Other domesticated animals infected in Iraq include cattle, water buffaloes, camels, horses, donkeys and mules. In the waters used by infected sheep and goats *Lymnaea tenera euphratica* Mousson was the most prevalent snail. This snail is naturally infected with two cercariae one an apharyngeal longifurcate distome, the other an apharyngeal brevifurcate distome. That the latter is the infective stage of *O. turkestanicum* was proved experimentally. *Schistosoma haematobium* and *S. bovis* cercariae occurred naturally in local *Bulinus truncatus* around Baghdad. R.T.L.

Transactions of the Royal Society of Tropical Medicine and Hygiene.

MacHATTIE, C. & CHADWICK, C. R.—" *Schistosoma bovis* and *S. mattheei* in Irak with notes on the development of eggs of the *S. hæmatobium* Pattern." XXVI (2), 147-156, 2 pls., 16 refs. [August, 1932.]

MacHattie & Chadwick have been able to examine over 4,000 specimens of *Schistosoma bovis* from goats and equines, in addition to sheep and cattle, in Irak. As a result they find variations which lead them to reject *S. mattheei* as a valid species.

They find that the vitellaria may occupy anything from one quarter to two-thirds of the body length, about one-half being usual. The ova show variation from the typical *bovis* shape to the *mattheei*- and even *hæmatobium*-like shapes : *S. hæmatobium* is common in man in Irak, but the *S. bovis* infections are always portal and intestinal, and in females with *hæmatobium*-like eggs (about 0·2 per cent.) the vitellaria occupy one-half the body length. The only other schistosome definitely present in Irak is *S. turkestanicum*. B.G.P.

Transactions of the Royal Society of Tropical Medicine and Hygiene.

MILLS, E. A., MacHATTIE, C. & CHADWICK, C. R., 1936.— " *Schistosoma haematobium* and its life cycle in Iraq." 30 (3), 317-334.

After reviewing previous work on the vectors of *Schistosoma haematobium* and the extent of infection in Iraq, the authors give an account of their own investigations which show that the only vector in that region is *Bulinus truncatus* vars. *contortus*, *dybowskii* and *innesi*. The cercariae emerge from naturally infected snails between 10.30 a.m. and 11.30 a.m. even if the snails are kept in the dark. In the hottest period of the year the cercariae apparently live for less than 24 hours. Comparatively few emerge during the colder weather and none in the winter. White mice, but not guinea-pigs, were experimentally infected from snails naturally infected and from others infected in the laboratory from urine from cases of bilharzia. Non-mammalian furcocercous cercariae were found in *Melanoides tuberculata* and in *Melanopsis nodosa*. *Limnaea tenera euphratica* were not found infected in the endemic regions. From December to May *Bulinus* snails disappear from the ditches and the risk of infection is then almost negligible. This explains the relative immunity of snipe and duck shooters. R.T.L.

BULLETIN OF ENDEMIC DISEASES. BAGHDAD.

NOR EL-DIN, G., 1958.—" Report on ankylostomiasis survey in Iraq, 1954." 2 (3/4), 117-137.

Nor El-Din reports on the results of an ancylostomiasis survey in Iraq. The incidence of the disease varies widely from locality to locality according to local conditions, but is generally high in the centre and south of the country, low or absent in the north. The reasons for this state of affairs are discussed. High incidence was particularly observed in association with palm-trees and among sarifa (reed or mud hut) dwellers. Owing to the difficulty of getting faecal samples from certain sections of the population the figures obtained are not considered to give a complete picture of the situation. Nor El-Din recommends improving the training of physicians, health officials and medical students in relation to hook-worm infection; health education; establishment of proper latrines in houses, schools and villages; a campaign against bare-footedness; and establishment of a proper system of filtered water. He outlines a scheme for elimination of ancylostomiasis in five years, based on Egyptian experience. An appendix stresses the common occurrence of human trichostrongylosis in Southern Iraq and of ascariasis throughout the country. Figures relating to the incidence of ancylostomiasis and other helminthic infections in the different provinces are given in a series of tables. J.M.W.

AL-MIHAN AL-TIBBIYAH. BAGHDAD.

NOR EL DIN, G. & EL-BAZ, I., 1953.—" Sputum examination in the diagnosis of bilharziasis of lungs." 1 (1/2), 19–25.

Transactions of the Royal Society of Tropical Medicine and Hygiene.

SENEKJI, H. A. & BEATTIE, C. P., 1940.—" The incidence of hydatid disease in Iraq." 33 (4), 461-462.

Of 123 street dogs killed by the police in Baghdad, 22 (17.83%) had *Taenia echinococcus*, 30 *Ancylostoma caninum*, 23 *Toxocara canis*, and 121 *Dipylidium caninum*. Of 2,347 sheep and goats 11.93%, and of cattle 24.66% were infected with hydatids. R.T.L.

Transactions of the Royal Society of Tropical Medicine and Hygiene.

SENEKJI, H. A., BOSWELL, C. & BEATTLE, C. P., 1939.—"The incidence of intestinal parasites in Iraq." 33 (3), 349-352. I/

The results of faecal examinations for protozoa and helminth infections of young adults in Iraq are tabulated. 84·5% were found to harbour some type of intestinal parasite. *Ancylostoma duodenale* occurred in 25·6%, *Ascaris lumbricoides* in 13·6%, Trichuris in 3·4%, Enterobius in 1·6%, Strongyloides in 0·7%, *Hymenolepis nana* in 2·1%, *Taenia saginata* in 0·6% and Dicrocoelium in 0·1%. The low incidence of *Taenia saginata* as compared with the neighbouring countries of Lebanon and Syria, where the incidence is 10%, is due to the fact that the Iraqis almost invariably eat meat cooked whereas the Syrians and Lebanese frequently eat raw meat.

R.T.L.

American Journal of Clinical Pathology.

SHAMMA, A. H., 1955.—"Schistosomiasis and cancer in Iraq." 25 (11), 1283–1284.

BULLETIN OF ENDEMIC DISEASES, BAGHDAD

WAJDI, N., 1955.—"A quantitative survey of *Bulinus* snails in the winter season." 1 (3), 257–264.

From an oecological survey of canals in south and central Iraq, Wajdi has shown that there is a second peak in the reproductive cycle of *Bulinus* sp. There is a gradual rise in numbers during December, January and February followed by a very marked, sudden increase in March. Data on the locality of the canals, the dates visited, their width, depth and length, the velocity of the current, nature of the bed, flora, number of *Bulinus* per 100 dips, air and water temperature etc. are given in tabular and graphic form.

S.W.

WAJDI, N. A., 1957.—"Aquatic plants harbouring the snail-vector of Bilharzia in Iraq." Year 1956–57, 2 (1/2), 30–40.

Wajdi gives the scientific name, local name, distribution, a brief description of 15 aquatic plants (of which 8 are illustrated) and the relation of each to the molluscan fauna, in Iraq.

R.T.L.

Journal of the Royal Faculty of Medicine of Iraq.

WATSON, J. M., 1948.—"Studies on bilharziasis in Iraq. Part I. Present status of the subject." 12 (4/5), 120–134.

(315a) Urinary bilharziasis is widespread and serious throughout Iraq, except in the extreme north, and is likely to increase as a result of irrigation development schemes. Previous reports are summarized. Less than 1% of the in-patients and out-patients in the State hospitals are being treated for bilharziasis, although 100% of in-patients in the surgical wards of Nasriyah State Hospital had haematuria and 21·7% of all the in-patients there showed eggs in routine urine examinations. The main factor in the spread of the infection is the wide distribution of *Bulinus truncatus* ; this disappears in the cold weather from the end of November to the middle of May and is most abundant in the late summer. The annual floods leave overflow pools and subsoil water pools in which the molluscs breed. This seasonal and localized occurrence of the vector suggests that anti-snail measures may achieve considerable success.

R.T.L.

Journal of the Faculty of Medicine of Baghdad, Iraq.

WATSON, J. M., 1950.—"Studies on bilharziasis in Iraq. Part V. Habitat of the vector snail, *Bulinus truncatus*, and its distribution in relation to the irrigation system." 14 (5/6), 148–185.

Continuing his studies on schistosomiasis in Iraq, Watson deals with the peculiar nature of the habitats of *Bulinus truncatus* in Iraq. Temporary flood or seepage pools, irrigation channels which are only intermittently filled and marshes which dry up during the summer are unfavourable sites. The snails are confined chiefly to stagnant waters and those which are slow-flowing. None are found in the Tigris, Euphrates or Diyalah waters. They are abundant in waters polluted with human excrement, in mud rich in decaying material and are common in wells and in rice fields in the swamp areas of southern Iraq and in borrow pits excavated for brickmaking. The principal limiting factors are temperature, desiccation, rapid water movement and changes in level, salinity, acidity and extreme pollution with animal excrement.

R.T.L.

JOURNAL OF THE FACULTY OF MEDICINE OF BAGHDAD, IRAQ.

WATSON, J. M., 1950.—" Incidence of bilharziasis in Iraq." [Correspondence.] 14 (5/6), 186.

In reply to an inquiry by M. A. Jalili, Watson explains that the incidence of schistosomiasis in Iraq which he had reported [for abstract see Helm. Abs., 19, No. 200a] was based on a single urine examination, by sedimentation, of schoolchildren under 18 years of age, not on persons attending dispensaries or hospitals, or members of the general population. He points out that multiple urine examinations and the use of acid-ether technique or the miracidiascope would have revealed a higher incidence. R.T.L.

Journal of the Royal Faculty of Medicine of Iraq.

WATSON, J. M., 1950.—" Studies on bilharziasis in Iraq. Part IV. The national anti-Bilharzia campaign." 14, 25–37.

An account is given of the organization and work of the Bilharzia Section of the Directorate General of Public Health in Iraq. Surveys already made reveal that in the northern area schistosomiasis is practically absent save for a few isolated and unimportant foci in the south of Mosul and Kirkuk liwas. In the southern area it is absent south of Basrah but in that city there is a 26% incidence which increases northwards to reach 75% in Qurnah and Madainah. Apparently it is absent on the left bank of the Shatt al Arab in Abadan. The Amarah liwa has a mean incidence of 67% while in the Muntafik liwa it is 47%. In Diwaniyah liwa some districts are relatively free and others are heavily infected. The mean incidence is about 26%. At Tel Mohammed in the central area the incidence is 80%. In Baghdad liwa it is 35% and in the city of Baghdad 27% of the male and 15% of the female population are infected. In Kut liwa the mean incidence is 48%. The incidence decreases towards Iran and increases to the south. In Diyalah liwa in the region surrounding Baqubah it is 28% but in some villages, e.g. Khan Beni Saad it rises to over 60%. In Hillah liwa it ranges from 50% in the Hashmiyah district to 5% in Hillah town. In Kerbelah liwa the mean incidence is 28% ranging from 18% in Najef and Kufa to 48% in Shifatha. At Felujah and Rumadi in the Dulaim liwa it is 36%. There are heavily infected foci on the banks of the Euphrates to the Syrian border but the infection is absent from the country bordering the upper reaches of the Tigris and the greater and lesser Zab rivers. The vector *Bulinus truncatus* is very scarce from December to May inclusive and very abundant from June to November. During the summer months a large part of the agricultural land in central and southern Iraq is irrigated by pumps and other water raising devices, but only deep pools and large canals, drains and culvert heads become permanent breeding foci. The molluscs appear to be absent from the Tigris and Euphrates rivers. Anti-snail measures carried out by the Bilharzia Section consist of clearance of vegetation from channels, drains, small pools and swamps followed by the application of copper sulphate. In Iraq drying of the canals promises to be an effective method of snail control owing to the relatively low humidity. In southern Iraq, notably in the Muntafik liwa a dermatitis caused by cercaria of undetermined non-human origin seriously interferes with agricultural activities. R.T.L.

Journal of the Faculty of Medicine of Baghdad, Iraq.

WATSON, J. M., 1952.—" Studies on bilharziasis in Iraq. Part VII. Further observations on incidence in the City of Baghdad." 16 (1), 1–24.

(227a) In the City of Baghdad a urine survey which was confined to 242 male hut-dwellers and 285 schoolboys, showed eggs of *Schistosoma haematobium* at a single examination in 46% of the former and 25% of the latter. Most of the hut-dwellers lived close to water in which snail vectors were abundant, and many were in daily contact with infected waters. Tables give the incidence by occupations and suburban areas. A snail survey showed a high incidence of infection in the Bab el Sheikh, Asimah and Kolat districts. All the *Bulinus* colonies found were on the east bank of the Tigris with a single exception at Washash. Schistosomiasis is a social rather than an occupational disease; the incidence in the poorer classes is higher than in those better off financially. The recent increase in the infection is attributed to an increase in the population. In the inhabited area there is a vast system of irrigation channels which water the gardens and parks of the city. Preventive measures suggested are: sustained anti-mollusc measures during summer and autumn; alteration and reconstruction of irrigation channels which should be lined, covered in or re-routed underground, and the rate of flow of the water should be increased; elimination by drainage or filling in of swamps, pools and excavations; provision of adequate sanitation and of a filtered water supply to all primitive dwellings, and provision of safe bathing places for children; compulsory urine examination and treatment of infected individuals; propaganda. R.T.L.

Journal Médical Libanais.

WATSON, J. M., 1952.—" Distribution, importance and prevention of urinary bilharziasis in the valley of the Tigris and Euphrates rivers." 5 (1), 13–29.

Watson summarizes his experience of schistosomiasis haematobia in the Tigris and Euphrates regions. The endemic area is mostly in Iraq but extends along the Euphrates into Syria and into the Khuristan province of Iran. The vector is *Bulinus truncatus*, which begins to reproduce on a large scale when the water temperature reaches 25°C. about the end of May, and reaches its peak of abundance in July. This mollusc survives the cold winter by burying in the mud. The emergence temperature for the cercariae is probably 18°C.–19°C. From December to April there is no risk of infection and in a normal season the dangerous period ends in October. Although widely distributed throughout the basins of these rivers, *B. truncatus* is local in incidence. It is not easy to find even at the period of maximum abundance and its distribution is intimately related to the nature of the irrigation system. Schistosomiasis is a social rather than an agricultural disease. At Tel Mohammed, near Baghdad, where the population is engaged in non-agricultural work the incidence is 80% whereas in the rice-growing area south of Kufa the infection is light as the molluscs are widely scattered. Although the temperature and climate of the northern part of the Tigris-Euphrates basin are very suitable, *B. truncatus* is apparently absent. The vast new irrigation schemes planned there will inevitably add to the extent and gravity of the schistosome problem. R.T.L.

Al-Mihan Al-Tibbiyah. Baghdad.

WATSON, J. M., 1953.—" Studies on bilharziasis in Iraq. Part IX. Relationship of incidence to occupation." 1 (1/2), 13–18.

Watson had studied the incidence of schistosomiasis haematobia in 31,800 males in Iraq, and has tried to correlate the incidence with the occupations of the 7,797 men found to be infected. There was no obvious correlation between incidence and occupation but the incidence varied with the financial status. Those groups with an infestation rate above the mean were poor, lived in houses without a pure water supply and received no regular compulsory medical attention. Those with an infestation rate below the mean were either financially better off or received regular medical care as in the case of schoolboys, soldiers, policemen and health workers. S.W.

Al-Mihan Al-Tibbiyah. Baghdad.

WATSON, J. M., 1953.—"Studies on bilharziasis in Iraq. Part X. Incidence and epidemiology in the city of Basrah." 1 (3), 2–31.

The present incidence of schistosome infection in the city of Basrah and the surrounding irrigated area is compared with that in 1925. Although improved sanitation, free treatment and pure water supply have been provided schistosome eggs were present in 32·2% of the 4,252 individuals examined. *Bulinus truncatus* was present in 5 out of the 20 irrigation canals examined, and in the city were found mainly in the central area. Although the oecological conditions in the southern half of the Basrah province were apparently suitable for *Bulinus* their absence is attributable to the occasional rises in salinity of the estuary water. R.T.L.

Journal of the Faculty of Medicine of Baghdad, Iraq.

WATSON, J. M., 1953.—" Studies on bilharziasis in Iraq. Part VIII. Relationship of incidence to age." 17 (1/2), 1–18.

In urine examinations of over 30,000 individuals, mostly males, in Iraq, *Schistosoma haematobium* was present in 21·3% to 26·7% of the different age groups, except those under four years old (of which too few cases were examined to give reliable results) and the group 15–19 years old, where the incidence was 28·4%. Watson reviews some of the relevant literature and gives 34 references. M.McK.

Parasitology.

WATSON, J. M., 1953.—" Human trichostrongylosis and its relationship to ancylostomiasis in southern Iraq, with comments on world incidence." 43 (1/2), 102–109.

A species of *Trichostrongylus* is common in man along the lower courses of the Tigris and Euphrates, decreasing northwards. In the Basrah area the incidence is 25·4%; at Nasriyah it is 14·2%. No cases were found above Kurmah or Amarah. Inland from the banks of the rivers it is almost unknown. Apparently, conditions of high humidity due to perennial swamps, dense shade as in palm forests, and grass or other low ground vegetation are necessary for the development and survival of the free-living stages. Although the incidence is high, the infections are light and their chief importance lies in the differentiation of the eggs from those of hookworm. The world incidence is tabulated from various publications. It is estimated that 50 million persons are infected. R.T.L.

Bulletin of the College of Arts and Sciences, Baghdad.

WATSON, J. M., 1956.—" The schistosomes and their molluscan vectors in Iraq." **1**, 1–11.

Present knowledge of the schistosomes of Iraq and of their vectors and distribution is summarized. *Schistosoma haematobium* is common in man in the centre and south and is spread by *Bulinus contortus*. *S. turkestanicum* and *S. bovis* are very common in domesticated animals in the lower part of the Tigris and Euphrates valleys. The vector of the former is probably *B. contortus* although this has not yet been established experimentally and that of the latter is *Limnaea lagotis*. Both *B. contortus* and *L. lagotis* are absent from the main rivers and their tributaries and are limited to marshes, swamps and irrigation channels. The absence of *B. contortus* from the north, except for isolated colonies at Tel Keif and Jaïyef and from the extreme south beyond the Khandaq canal in Basrah, is due to the salinity of the tidal water in the lower Shatt Al Arab. Characteristic eggs of *S. bovis* were found by Watson on one occasion in human urine. Early reports of *Schistosoma mansoni* in certain small foci in the south of Iraq are now known to be erroneous since no suitable vector is present in the Tigris-Euphrates valley. The only other schistosome recorded from Iraq is *Bilharziella* sp., probably *B. yokogawai* found once by MacHattie in 1936 in *Anas crecca*; its vector is unknown. R.T.L.

Bulletin of Endemic Diseases. Baghdad.

WATSON, J. M., 1957.—" Effect of human pollution on density of populations of *Bulinus truncatus*." Year 1956–57, **2** (1/2), 19–29.

A systematic survey of a large drain running through the village of Tel Mohammed near Baghdad, during the season of maximal mollusc population, showed that the number of *Bulinus truncatus* was highest in the stretch within the village and diminished rapidly beyond its limits. While there was a very close correlation between the numbers of snails and the opportunities for human pollution of the water, the exact mechanism whereby human pollution favours the development of large populations of schistosome-transmitting snails and particularly of *B. truncatus* is still unknown. R.T.L.

Journal of the Royal Faculty of Medicine of Iraq.

WATSON, J. M. & AL HAMAMI, A., 1949.—" Studies on bilharziasis in Iraq. Part II. Incidence in the city of Baghdad—an analysis of over a thousand random urine samples with reference to age, sex and locality." 13, 49–62.

The incidence of urinary bilharzial infection in the lower income groups of the population in Baghdad approximates 27% in males and 14% in females. The infection is endemic in the city. The peak period of incidence lies between the ages of 20 and 30 as shown in an analysis of 1,000 random samples of urine. R.T.L.

Journal of the Iraqi Medical Professions.

WATSON, J. M. & NAJIM, A. T., 1956.—"Studies on bilharziasis in Iraq. Part XI. Observations on schistosome dermatitis." **4** (1), 4–10.

Dermatitis due to non-human schistosome cercariae is rare in Iraq. Apparent schistosome dermatitis cases are common during the warm season at Kurmat Beni Saad. Others are reported from Tel Mohammed near Baghdad, near Baqubah and at Jebäiyish. In all of these cases pruritus started within 20 to 30 minutes after entering the water and lasted for three to five days. In one instance a European, while shooting, contracted pruritus when wading in a marsh in December. Two of the cases, although free from infection at the time, developed schistosomiasis haematobia three months later, but the others may have been due to cercariae of *Schistosoma turkestanicum* or *Bilharziella* sp. (it is incidentally mentioned here that the vector of *S. turkestanicum* is *Limnaea tenera euphratica*). R.T.L.

Journal of the Royal Faculty of Medicine of Baghdad, Iraq.

WATSON, J. M., ZAHAWI, S. AL, NAJI, A. F. & MURTADHA, M., 1949.—" Studies on bilharziasis in Iraq. Part III. Pulmonary bilharziasis." 13 (6), 154–171.

After reviewing earlier publications on chronic pulmonary bilharziasis, four case histories are given from Iraq. Of these, three are typical examples of bronchopulmonary bilharziasis. In one, pulmonary tuberculosis was a complication. That the incidence of chronic pulmonary bilharziasis is not high is borne out by statistics from the Central Pathological Institute in Baghdad for in 1942–1944 only 2·6% of bilharzia cases showed lung infection. In studies on 109 tuberculous patients in the Isolation Hospital, Baghdad, 13 cases were found to have urinary bilharziasis and of these two gave some indications of pulmonary bilharziasis but there was no evidence of any direct association between these two lung infections. R.T.L.

Bulletin of Endemic Diseases. Baghdad.

ZAKARIA, H., 1954.—" Notes on human schistosomiasis in Iraq, with particular regard to the bionomics of the intermediate host, *Bulinus truncatus* Baylis." **1** (1), 46–52.

An investigation was made on the oecology of *Bulinus* sp. in a locality in Baghdad Liwa heavily infected with bilharziasis, and where sulphation of a canal did not prove successful in eradicating the snails. Snails were collected on four occasions from three regions of the canal, one where the canal was shaded by willows, one near a tea-house and one near an abandoned village. Distribution of *Bulinus* sp. in the canal was related to a lesser extent to human and animal pollution than had been anticipated, higher numbers of snails being recorded from the areas shaded by willows or where algal growth was abundant. The food source of the snails, as deduced from examination of gut contents, appeared to be of plant, bacterial and decomposing organic materials. These findings differ from the conclusion of Mozley in 1951 who considered decomposing human and animal organic material to be the chief source of food of *Physopsis globosa* in Rhodesia [for abstract see Helm. Abs., **20**, No. 158]. It is of interest that although MacHattie in 1936 failed to encounter *Planorbis* sp. in Baghdad Liwa, Zakaria found them in this area during the present investigation, and at the terminus of the Mahmoodiyah canal, some 40 km. south of Baghdad. D.L.H.R.

Bulletin of Endemic Diseases. Baghdad.

ZAKARIA, H., 1955.—" Further study on the ecology of the intermediate host of *Schistosoma haematobium*, *Bulinus truncatus* Baylis." **1** (2), 123–155.

Zakaria has continued his study of the oecology of the Abdul-Latif al-Farras Canal north of Baghdad. This canal is supplied from the Tigris, about 6 km. south-west of Tarmiyah and was dug in 1946. Data are given on its velocity, depth, width, nature of its bed, seasonal changes in temperature of the water, flora and fauna, and especially in relation to the molluscan population. *Bulinus truncatus* has become established in the canal probably as a result of inundation by flood waters bringing the snails from old established canals in the neighbourhood. A close connection was observed between the *Bulinus* populations and the presence of willows on the banks which provide shade and encourage the growth of *Cladophora*. As *B. truncatus* is very sensitive to desiccation, regular rapid drying of the canals may prove a convenient and efficient method of control. Copper sulphate was effective in reducing the *Bulinus* by 95% and the *Limnaea* by 60% in a heavily infested sector. The snails readily tolerate water temperatures as low as 8°C. and as high as 33°C. but brief exposure to −2°C. or to 50°C. was lethal. R.T.L.

ZAKARIA, H., 1959. [Department of Biology, College of Medicine, Baghdad, Iraq.] "Historical study of *Schistosoma haematobium* and its intermediate host, *Bulinus truncatus*, in Central Iraq." **Journal of the Faculty of Medicine of Baghdad. New series, 1** (1), 2–10.

Zakaria briefly reviews the records of the occurrence of *Schistosoma haematobium* and its intermediate host *Bulinus truncatus* in Iraq. He then reports the finding of sub-fossil shells of *Bulinus* in the mud bricks of a number of ancient buildings in the Tigris-Euphrates valley. The oldest of these is about 6,000 years of age and the author concludes that the presence of these snails may be taken as an indication of the probable existence of urinary schistosomiasis in Iraq for a considerable period of time. C. A. Wright

ZAKARIA, H., 1959. "The interrelationships of the human and molluscan hosts of *Schistosoma haematobium* and the more common ways of exposure to bilharzial infection in Iraq." **Journal of the Faculty of Medicine, Baghdad. New series, 1** (2), 53–68.

Zakaria examines the results of past surveys by various authors on the incidence of *Schistosoma haematobium* infection in Iraq and finds that it is higher in rural areas than in cities where piped water supplies are available. The common ways in which infection is contracted are enumerated and illustrated by means of photographs. The author believes that cercarial dermatitis in Iraq is due to *S. haematobium*. J.W.S.

AL-DABAGH, M. A., BABERO, B. B. & EL-HASHIMI, M., 1964. "The zoonosis of animal parasites in Iraq. IV. Some unusual lesions associated with an *Opisthorchis tenuicollis* infection." **Veterinary Record, 76** (4), 116–119.

Of 49 dogs and 34 cats examined in Baghdad 23 and 30 respectively harboured *Opisthorchis tenuicollis*. The worm burdens varied from 2 to over 6,000, cats being usually more heavily parasitized than dogs. Certain gross pathological lesions associated with moderate (100 to 1,000 flukes) or heavy (over 1,000 flukes) infections were recognizable. In one cat with over 6,000 flukes there were hepatocellular carcinomata and cholangiomata; the gross and histopathology of these lesions are described and illustrated by photographs and photomicrographs and the authors discuss the possible causes of the malignant changes. They conclude that further investigations are necessary to determine if specific carcinogens are produced or if the changes are due to mechanical irritation of the liver. S.W.

ALLOW, J. M. & KATCHO, Z. A., 1967. "Nematode infestation of sugarcane in Iraq." *Pl. Dis. Reptr*, **51** (10), 809.

Longidorus sylphus, Helicotylenchus dihystera, Pratylenchus zeae and *Tylenchorhynchus* sp. are reported for the first time on sugar-cane in Iraq. J.B.

ALMALLAH, Z., 1968. "Internal hirudiniasis in man with *Limnatis nilotica*, in Iraq." *J. Parasit.*, **54** (3), 637–638.

Nine human cases of endoparasitism by *Limnatis nilotica* in the upper air passages are reported from Iraq. Symptoms and treatment are described. This is only the second report of internal hirudiniasis of man in Iraq, and the first involving *L. nilotica*. However, such infections may be more frequent than is apparent owing to the reluctance of infected persons to seek medical treatment. M.R.N.S.

ARAOZ, J. DE, 1962. "Study of water flow velocities in irrigation canals in Iraq and their mathematical analysis." **Bulletin of the World Health Organization, 27** (1), 99–123. [French summary p. 123.]

The author presents a detailed study of water-flow phenomena in earth canals in Iraq. Since water velocity in streams and canals is known to influence the breeding of the vector snails of schistosomiasis it is suggested that the simplified method for measuring the rate of water flow, devised by the WHO team on the control of schistosomiasis, may be of wide application in snail control by molluscicides. J.H.B.

AL-SAFFAR, A. S., BABERO, B. B., AL-DABAGH, M. A. & SHAHEEN, A. S., 1962. "The zoonosis of animal parasites in Iraq. III. The dog as a reservoir for human nematode infections." **Bulletin of Endemic Diseases. Baghdad, 4** (3/4), 1–17.

Toxocara canis was found in 10 of 38 stray dogs collected in the streets of Baghdad, *Toxascaris leonina* in 22, *Ancylostoma* sp. in 1 and *Uncinaria stenocephala* in 5. The nematodes are described and figured and their public health significance is discussed. J.W.S.

BABERO, B. B. & AL-DABAGH, M. A., 1963. "The zoonosis of animal parasites in Iraq. IX. An experimental infection of a dog with *Echinococcus* of human origin." *J. Fac. Med., Baghdad*, n.s. **5** (2), 79–84.

BABERO, B. B. & AL-DABAGH, M. A., 1963. "The zoonosis of animal parasites in Iraq. XII. The dog as a reservoir for human cestode infections." *J. Fac. Med. Baghdad*, n.s. **5** (4), 149–158.

BABERO, B. B., FAWZI, A. H. & AL-DABAGH, M. A., 1965. "Zoonoses in Iraq. Further studies on spirocerciasis." **British Veterinary Journal, 121** (4), 183–190.

Examination of 193 dogs in Iraq showed the incidence of *Spirocerca lupi* in different areas to vary from 43·1% to 100%, with an average of 66%. The worms were found in the aorta, oesophagus, stomach, lungs, trachea, intestine and connective tissue. 20 dogs showed aortic nodules, 28 had nodules in the oesophagus and the aorta, and 80 had oesophageal nodules only. Stomach nodules were seen in 6 animals. The oesophageal lesion is a granuloma; in 2 cases the lesion simulated a sarcomatous growth. In the aorta, a thickened mass was seen attached to the adventitia and in 2 cases the intima was thickened and several patches of calcified and ossified areas were seen. The stomach lesion is a granuloma containing worms. Generally, infected lungs show extensive atelectasis and emphysema and thickened or degenerated alveolar walls. Sections of worm were surrounded by a granulomatous reaction and a thick fibrous mass. The intermediate host of *S. lupi* in Iraq has not yet been identified. T.E.G.

BABERO, B. B., AL-DABAGH, M. A., AL-SAFFAR, A. S. & ALI, F. M., 1963. "The zoonosis of animal parasites in Iraq. VIII. Hydatid disease." **Annals of Tropical Medicine and Parasitology, 57** (4), 499–510.

In southern and central Iraq, hydatid cysts were found in 29·5% of 2,048 sheep, 13·9% of 172 cows, 35·6% of 87 buffalo, 49·1% of 55 camels and 26·6% of 15 goats. Ruminants are therefore considered an important reservoir of *Echinococcus* infection, particularly as conditions of slaughter, methods of meat inspection and the state of abattoirs and meat markets are generally unsatisfactory. Of 169 stray dogs examined 38·4% were infected with *E. granulosus*, the number of worms per dog ranging from 2 to 30,000. The authors discuss the probable incidence of human hydatidosis. J.H.B.

BABERO, B. B. & KAISI, A., 1965. "The zoonosis of animal parasites in Iraq. XI. A case of hydatid cyst of the spleen." *Revta Biol. trop.*, **13** (1), 135–138. [Spanish summary p. 138.]

BABERO, B. B., SHAHEEN, A. S., AL-DABAGH, M., SHAKARCHI, A. R. & EL-SHAWI, N., 1963. "The zoonosis of animal parasites in Iraq. VI. Preliminary observations on human helminthiases with notes on other such studies." *J. Fac. Med., Baghdad*, n.s. **5** (1), 8–33.

BABERO, B. B., SHAHEEN, A. S., AL-SAFFAR, A. S. & AL-DABAGH, M., 1962. "The zoonosis of animal parasites in Iraq. II. Observations on spirocerciasis." *J. Fac. Med., Baghdad*, n.s. **4** (2), 73–77.

Spirocerca lupi was found in the oesophagus, stomach and lungs of 13 of 25 stray dogs in Baghdad. The histopathology of the oesophagus is described. The geographical distribution in relation to the life-cycle of *S. lupi* is discussed. Reference is made to one reported case of human infection with *S. lupi*. D.W.L.

BAQIR, H., 1960. "Prevalence survey of bilharziasis, ascariasis and hookworm infection in Mussayeb Project." *Bull. endem. Dis.*, 3 (3/4), 24–28.

BHATTY, M. A., 1967. "The status of ancylostomiasis in Iraq." *Z. Tropenmed. Parasit.*, 18 (2), 180–192. [German summary pp. 191–192.]

The incidence of ancylostomiasis is compared between the higher rainfall zone in the north and the fundamentally drier irrigated zones in central and southern Iraq. In the irrigated areas the incidence of infection is high due to the favourable temperature throughout the year, increased surface moisture, sandy loam soil with ideal conditions of warmth and humidity due to the presence of irrigation projects, low socio-economic conditions of the population and decaying vegetation with date-palms. In Iraq, hookworm anaemia is widespread despite the fact that the normal diet of the inhabitants is rich in iron although low in animal protein. Incidence of infection was equal in male and females in the north but higher in the males in the other regions. The peak infection rate was in the age group 11 to 20 years. Greater health education is required for control of the disease. K.H.

EL AZZAWI, J. A. H., KLIMT, C. R. & BAQUIR, H., 1961. "Random sampling survey of bilharziasis in the Tarmiah project area." **Bulletin of Endemic Diseases. Baghdad, 4** (1/2), 64–68.

In 3 localities in the Tarmiah project area of Iraq, 254 males and 229 females (adults and children) were selected at random and urine samples examined for *Schistosoma haematobium* eggs. 34·2% were infected; the incidence of infection was lower in females than in males in all age groups. J.W.S.

EL-GINDY, M. S. & HANNA, F. Y., 1963. "Larval trematodes from snails *Pirenella conica* and *Melania tuberculata*, with special reference to heterophyiasis." *Bull. endem. Dis.*, 5 (1/2), 33–58.

Pirenella conica from Lake Quaroun and Lake Menzala and *Melania tuberculata* from the afferent drains of these lakes and drains in Giza, Iran, were examined for larval trematodes. The following were recovered from *P. conica*: rediae and cercariae of *Heterophyes* sp., described by Martin & Kuntz, 1955; rediae and cercariae of *Stictodora tridactyla*; Echinostome redia and cercariae—the cercariae having 19 collar spines in one row (5 on each side on the ventral surface, 9 on the dorsal surface), 3 pairs of penetration glands and one pair of tetralobed glands opening on the anterior tip and 5 pairs of flame cells; a spined xiphidiocercaria with 3 pairs of penetration glands and a spined tail. The following were recovered from *M. tuberculata*: cercariae of *Cercaria douthitti*; cercariae of *Lecithodendrium pyramidum*; 2 new parapleurolophocercous cercariae which differ from each other in the position of the last 3 pairs of penetration glands and measurements; the redia of one of these cercariae. All stages are described and illustrated. T.Y.

EL-GINDY, M. S. & RADHAWY, I. A., 1965. "Periodicity and longevity of *Schistosoma haematobium* cercariae liberated from *Bulinus truncatus* in Central Iraq." *Bull. endem. Dis.*, 7 (1/2), 55–72.

EL-SHAWI, N., BABERO, B. B. & AL-DABAGH, M. A., 1963. "Observations on trichostrongylosis in Iraq." *Parassitologia*, 5 (2), 161–174.

Trichostrongylus colubriformis, recovered at autopsy from 2 Iraqis at Baghdad, is described. This is the first specific identification of a human trichostrongylid in Iraq. Methods of isolation of ova, the epidemiology of trichostrongylosis among the human population, and methods of control are given. Characteristics useful in distinguishing hookworm from trichostrongylid ova, such as egg shape and number and arrangement of blastomeres, are listed. P.S.G.

FARJO, P. D., 1960. "The incidence of ancylostomiasis in Iraq." *Bull. endem. Dis.*, 1 (3/4), 29–35.

FATTAH, F. N., BABERO, B. B., KARAGHOULI, A. A. & SHAHEEN, A. S., 1964. "The zoonosis of animal parasites in Iraq. X. A confirmed case of human ectopic fascioliasis." **American Journal of Tropical Medicine and Hygiene, 13** (2), 291–294.

An immature fluke identified as *Fasciola gigantica* was recovered from an inflammatory lesion in the lumbar region of a 25-year-old Arab woman. Mention is made of previous records of ectopic fascioliasis. G.S.N.

IMARI, A. J., 1962. "Pulmonary hydatid disease in Iraq." **American Journal of Tropical Medicine and Hygiene, 11** (4), 481–490.

Hydatid disease in man is highly endemic in Iraq, especially in the central region. Of the 285,000 patients admitted to the Republic Hospital in Baghdad since 1941 and of the 60,000 patients seen in private practice during the last 14 years, one in 292 and one in 187 respectively were infected. Hydatid was also present in 42% of 2,120 sheep, 12% of 65 lambs, 40% of 300 goats, 50% of 52 buffaloes and in 75% of 68 camels examined in a Baghdad abattoir. Earlier surveys by the present and other authors have shown there to be a high incidence of infection in the many stray dogs in Iraq. The Casoni test diagnosed 86% and the complement fixation test 20% of 320 cases of pulmonary hydatid disease of which 269 had a cough, with or without haemoptysis. Chest X-ray was very useful in diagnosis. Though no form of medical treatment can be relied on at present surgical removal of cysts is sometimes possible. Control measures by publicity and legislation are discussed. J.W.S.

KATCHO, Z. A. & ALLOW, J. M., 1968. "Dagger nematodes, *Xiphinema index*, on grapevines in Iraq." *Pl. Dis. Reptr*, 52 (8), 626–627.

Xiphinema index has been found associated with *Vitis* sp. suffering from fan-leaf disease and may be the vector of the fan-leaf virus. This is the first known report of *X. index* associated with diseased *Vitis* sp. in Iraq. J.B.

NAJARIAN, H. H., 1961. "Biological studies on the snail, *Bulinus truncatus*, in central Iraq." **Bulletin of the World Health Organization, 25** (4/5), 435–446. [French summary p. 446.]

Najarian studied the seasonal linear and size distributions of *Bulinus truncatus* populations in the field in Iraq and the egg masses, development, hatching and growth in the laboratory. The egg-laying capacity of grouped and single snails in relation to their size and the egg laying of random *B. truncatus* populations were also observed. 8 tables summarize the results. From his observations he suggests that the most suitable times for applying mollusicides are either early in May, before breeding activities begin, or early in November when most of the snails are juveniles. It appears unlikely that *B. truncatus* lays eggs during the winter in central Iraq. S.W.

NAJARIAN, H. H., ARAOZ, J. DE, KLIMT, C. R., AL ANI, K. & AZZAWI, J., 1961. "Studies on bilharziasis endemicity in the vicinity of Basra, Iraq." **Bulletin of the World Health Organization, 25** (4/5), 467–478. [French summary p. 477.]

In a survey of 8 zones bordered by canals in the Basra area the prevalence of *Schistosoma haematobium* eggs in the urine of children examined fell from 86% in the northernmost canal (Khandak) to nil in the 4 southern zones with the sharpest and most significant drop (from 42% to 2%) between the Khora and Seraji canals (a distance of 2 km.). The velocity, salinity, turbidity and *p*H of the waters in the endemic and non-endemic areas did not differ significantly. *Bulinus truncatus* was not found in any of the areas during June and October 1958 but transmission is still taking place. The distribution of *Gyraulus* and *Bithynia* corresponded roughly to the area of human infection. The authors conclude that *Bulinus truncatus* populations may be absent for several years and that other fresh-water snails may act as vectors. The authors consider that the saline water of Lake Hammar and not sea water is responsible for the salt present in the Shatt al Arab River near Basra and that this salinity does not prevent the breeding and development of *Bulinus truncatus*. S.W.

NATOUR, R. M., EL-HAIDERI, H. I MOHAMMED, J., 1965. "Citrus-root nematod in Iraq in 1965." *Pl. Dis. Reptr*, **49** (9), 792.

Tylenchulus semipenetrans was newly found in Ir in all the citrus groves and nurseries surveye Sour orange, citron and sweet lime are equ susceptible and infested root-stocks and seedlin have spread the nematode widely. Typical sym toms are the dying back of young branches, sig of starvation in the leaves, general decline of tre and curling of roots. D.W.L.

OUGHTON, J. G. & RADHAWY, I. A., 1962. "A biological reconnaissance of bilharziasis of southern Iraq June 1961." **Bulletin of Endemic Diseases. Baghdad, 4** (3/4), 23–31.

Bulinus truncatus, the vector of *Schistosoma haematobium*, appears to be one of the less widely distributed species of fresh-water molluscs in southern Iraq. Whilst this snail is of frequent occurrence in irrigation canals, the small ponds and borrow pits near villages appear to be the main transmission sites. It is recommended that these foci be treated with molluscicides on the spot rather than incorporate them into a large-scale control scheme. J.W.S.

SALEM, H. H., HAYATY, Z. G. & AWANESS, A. M., 1967. "Clinical trials with dehydroemetine resinate in the management of schistosomiasis (due to *S. haematobium*) in Mosul, Iraq (1964-1966)." *J. trop. Med. Hyg.*, **70** (8), 203–207.

123 men infected with *Schistosoma haematobium* in Iraq were treated with dehydroemetine resinate (DHE). In the first phase of treatment patients received six 40 mg. tablets per day (total of 2,400 mg.). The 2nd phase of treatment varied between 5 and 18 days [at an unspecified dosage rate]. The total amount of the drug used in 100 cases was 3,360 g. This dosage was well tolerated. A cure rate of 58% was observed. All the patients after the first phase of treatment reported a great improvement in health. The use of DHE in other areas endemic for schistosomiasis in relation to modern immunological trends is briefly discussed. M.B-B.

SALEM, H. H., HAYATEE, Z. G., AWANESS, A. M. & AL-ALLAF, G., 1968. "Evaluation of the anthelmintic activity of thiabendazole in man." *J. trop. Med. Hyg.*, **71** (1), 11–17.

204 young people with various helminthic infections from the Mosul area, Iraq were treated with thiabendazole at a rate of 50 mg. per kg. body-weight in the form of 500 mg. tablets which could be chewed at leisure. Reduction of helminth egg counts was as follows: *Ascaris lumbricoides* 84·6%, *Trichuris trichuria* 46·1%, *Ancylostoma duodenale* 62·0%, *Enterobius vermicularis* 91% in single and 75% in mixed infections, *Hymenolepis nana* 42·4%—all but the last named involving 2 courses of treatment. *E. vermicularis* was the most common (77%) in both single and multiple infections. Detailed accounts of symptoms and diagnostic methods are given. The results are compared with those of other workers. Side effects were generally mild and well tolerated and thiabendazole must be regarded as a safe anthelmintic especially when the patient is encouraged to take the prescribed dose in his own time. [See also *Helminth. Abstr.*, **36**, No. 1492.] P.S.G.

SHAHEEN, A. S., BABERO, B. B., AL-DABAGH, M. & AL-DIN, M. J. D., 1962. "The zoonosis of animal parasites in Iraq. I. The dog as a reservoir for trematode infections." *J. Fac. Med., Baghdad*, n.s. **4** (2), 60–72.

25 stray dogs in Baghdad were examined for helminths. *Opisthorchis tenuicollis* was found in the bile-ducts, gall-bladder, pancreas, stomach, intestine and lungs of 10, *Metorchis albidus* in the bile-ducts and gall-bladder of 2, *Haplorchis taichui* in the intestinal mucosa of 5 and *H. pumilio* in the small intestine of 4 dogs. A diagnosis of each species is given. The life-cycles and histopathology of the canine host are described. Humans are known to infect themselves by ingesting metacercariae in raw or partially cooked fish. Education and improved hygiene are discussed as methods of control. D.W.L.

SHAMMA, A. H. & RASSAM, A. J., 1966. "Cirrhosis of the liver in Iraq (statistical and histopathological studies)." *J. Fac. Med., Baghdad*, n.s. **8** (2), 51–61.

SHAWKAT, T. N. & MUHSEN, J., 1963. "Surgical complications of bilharziasis in Iraq and their treatment. Report on 200 cases." **Journal of the Faculty of Medicine, Baghdad, n.s. 5** (2), 52–54.

ANNOTATED BIBLIOGRAPHIES

PREPARED BY THE
COMMONWEALTH INSTITUTE OF HELMINTHOLOGY

The following bibliographies are obtainable from the Commonwealth Institute of Helminthology, The White House, 103 St. Peter's Street, St. Albans, Herts, England.

1 *Cysticercus ovis* **and** *Taenia ovis.*
59 references covering 1932—1969. £0.50 ($1.30)

2 *Taenia saginata* **and** *T. solium* **in Lebanon, Turkey and Yugoslavia.**
50 references covering 1932—1969. £0.50 ($1.30)

3 **Helminthology in Iraq.**
71 references covering 1932—1969. £0.70 ($1.80)

4 **Humpsore (Stephanofilariasis) in domestic animals.**
71 references covering 1932—1969. £0.70 ($1.80)

5 **Skin lesions in domestic animals caused by** *Elaeophora, Rhabditis* **and** *Parafilaria.*
55 references covering 1932—1969. £0.50 ($1.30)

6 **Helminths and Plant Nematodes of Morocco.**
111 references covering 1932—1970. £1.00 ($2.60)

7 **Angiostrongylus.**
210 references covering 1932—1971. £2.70 ($7.00)

8 **Factors influencing the development of** *Ascaris* **eggs.**
120 references covering 1932—1971. £1.20 ($3.10)

9 **Helminths in archaeological and pre-historic deposits.**
32 references covering 1910—1972. £0.50 ($1.30)

Suggestions of topics suitable for future bibliographies will be welcomed.
Prices include postage by surface mail.